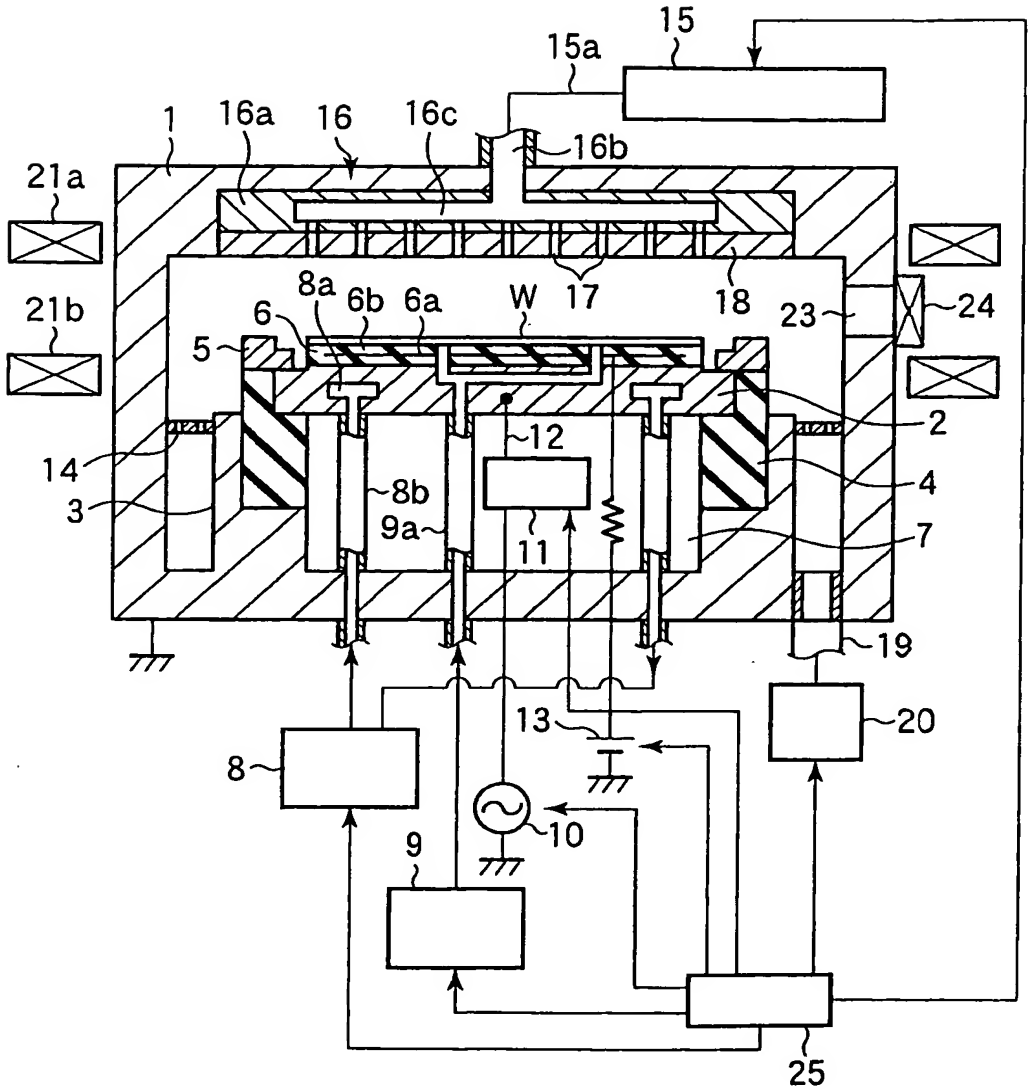

15
15a
1
16a
16
16c
16b
21a
21b
8a
6b
6a
W
17
18
23
24
6
5
2
12
14
3
8b
9a
11
4
7
19
13
20
8
10
9
25

FIG. 1

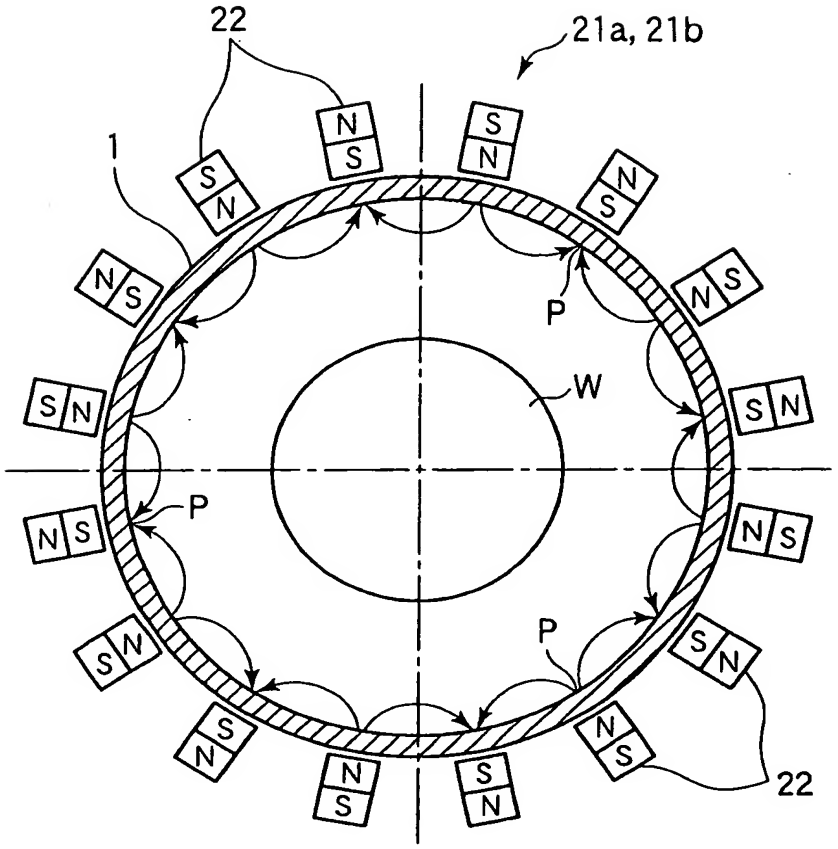


FIG. 2

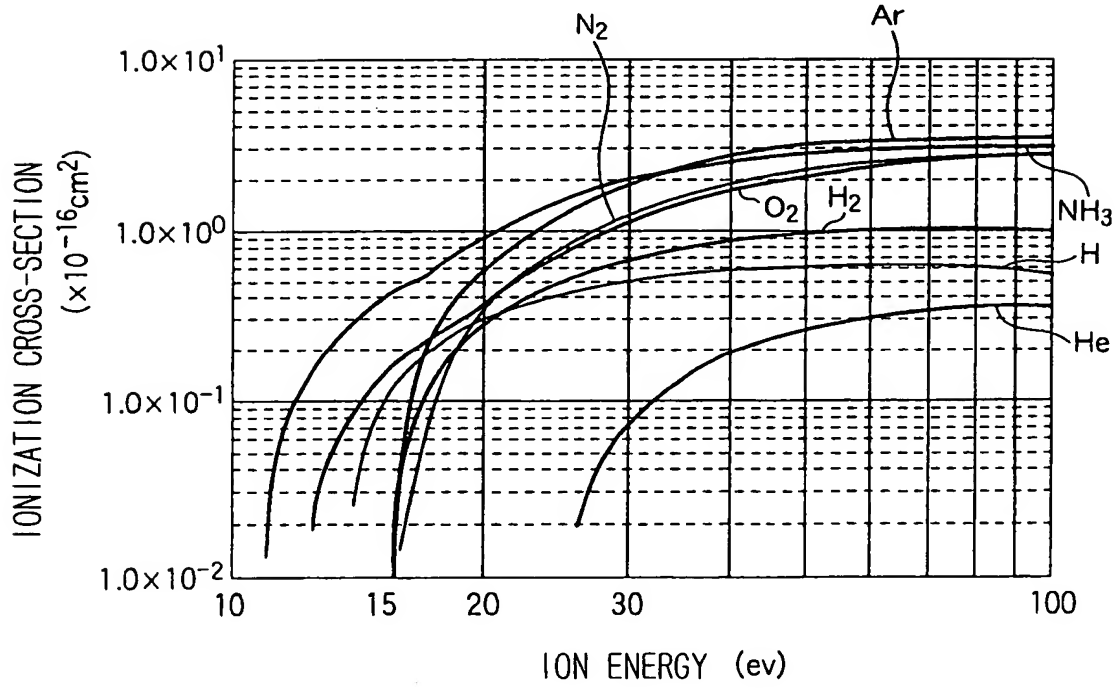


FIG. 3

ART 34 AMDT

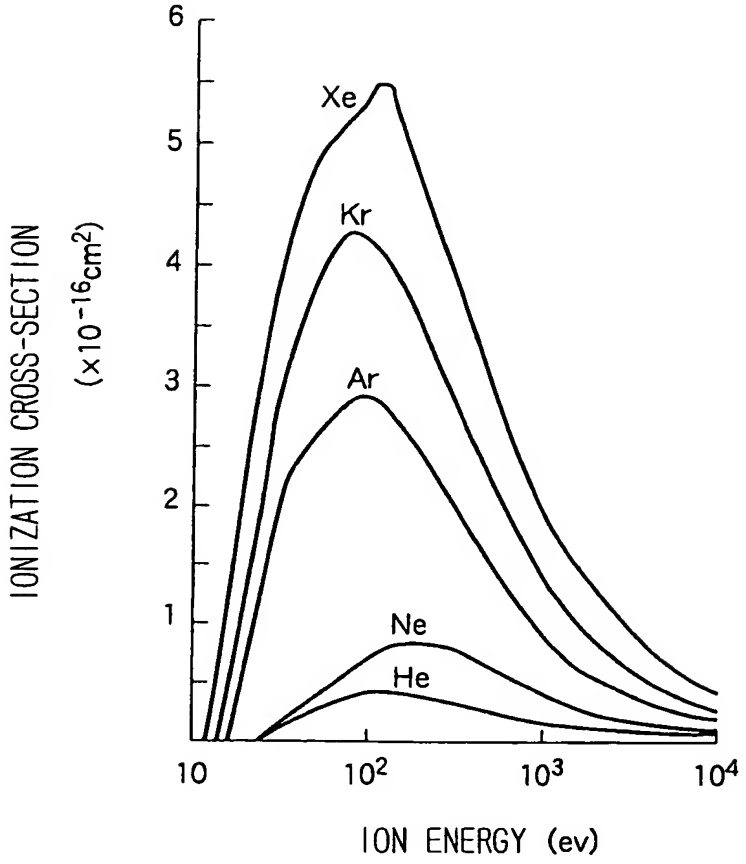

IONIZATION CROSS-SECTION
(x10⁻¹⁶cm²)
6
5
4
3
2
1
Xe
Kr
Ar
Ne
He
10
10²
10³
10⁴
ION ENERGY (ev)

FIG. 4

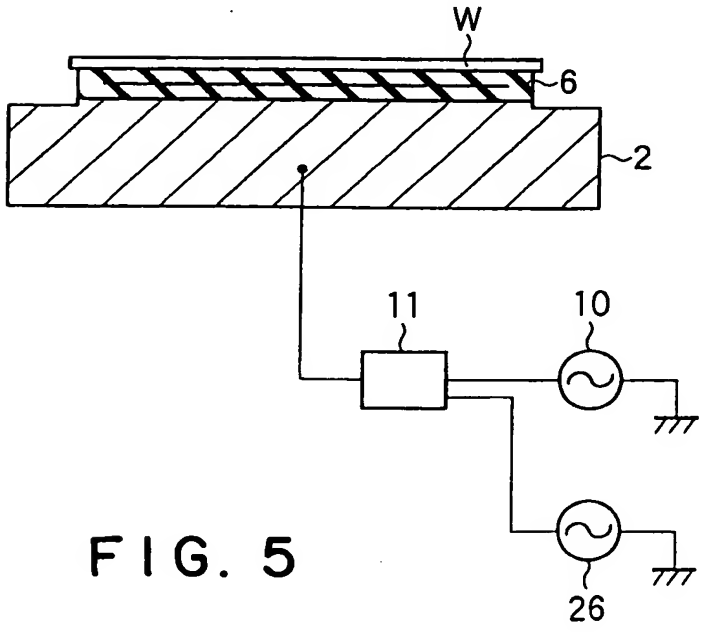

W
6
2
11
10
26

FIG. 5

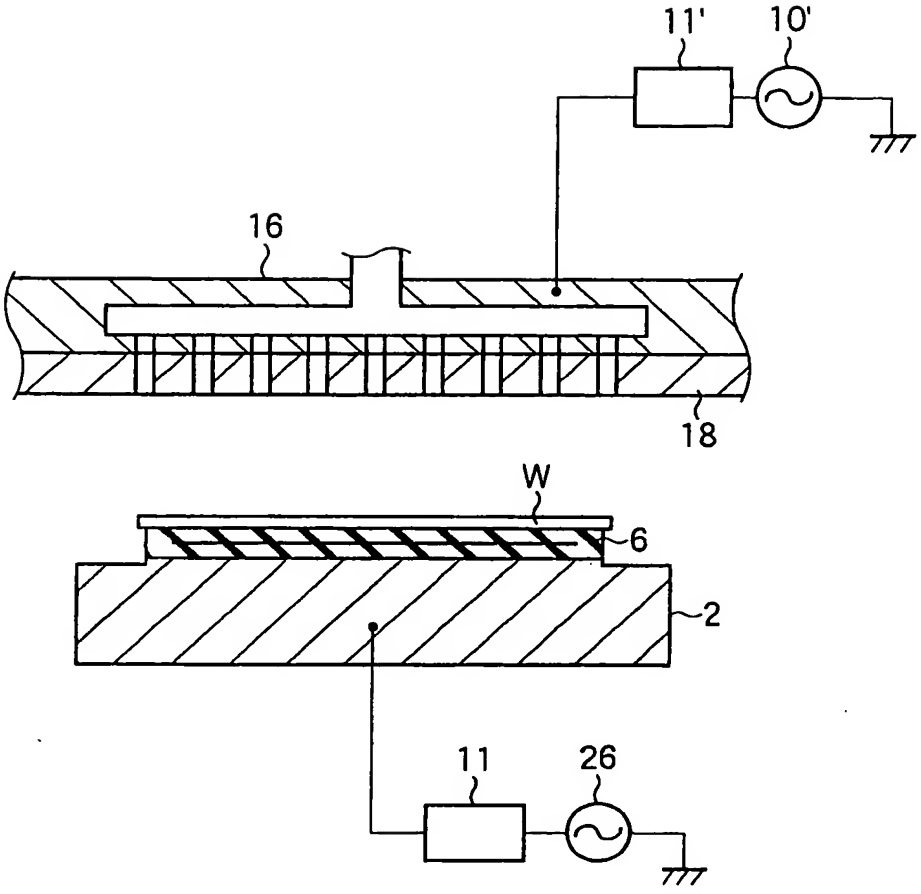


FIG. 6

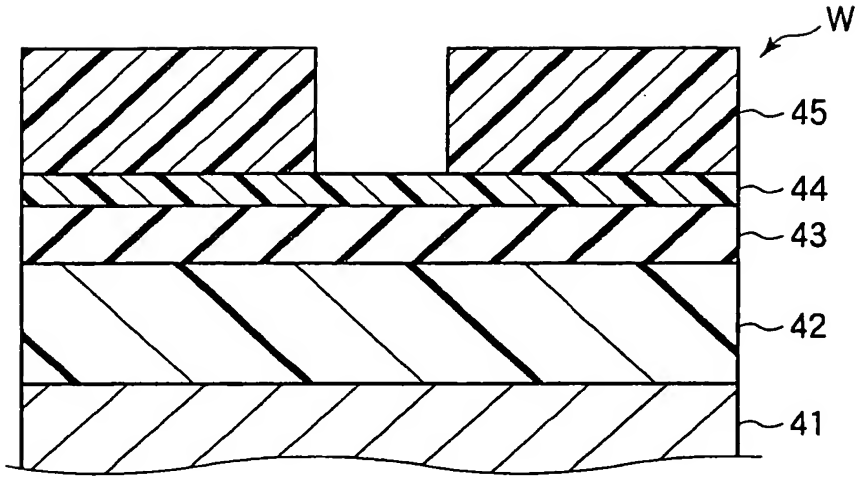


FIG. 7a

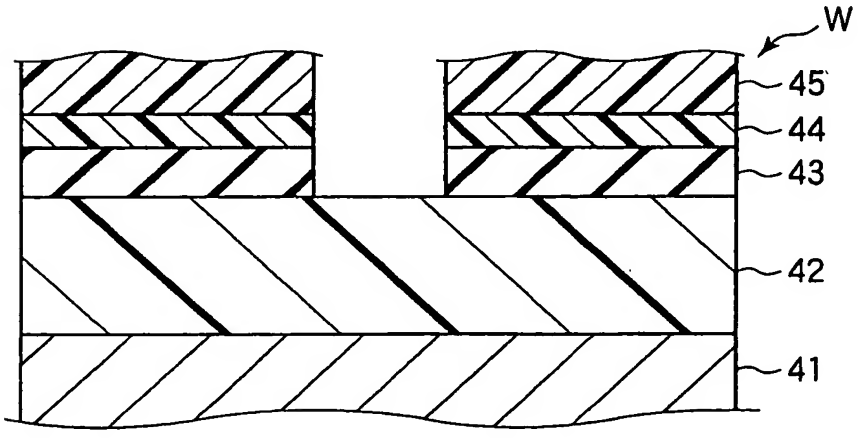


FIG. 7b

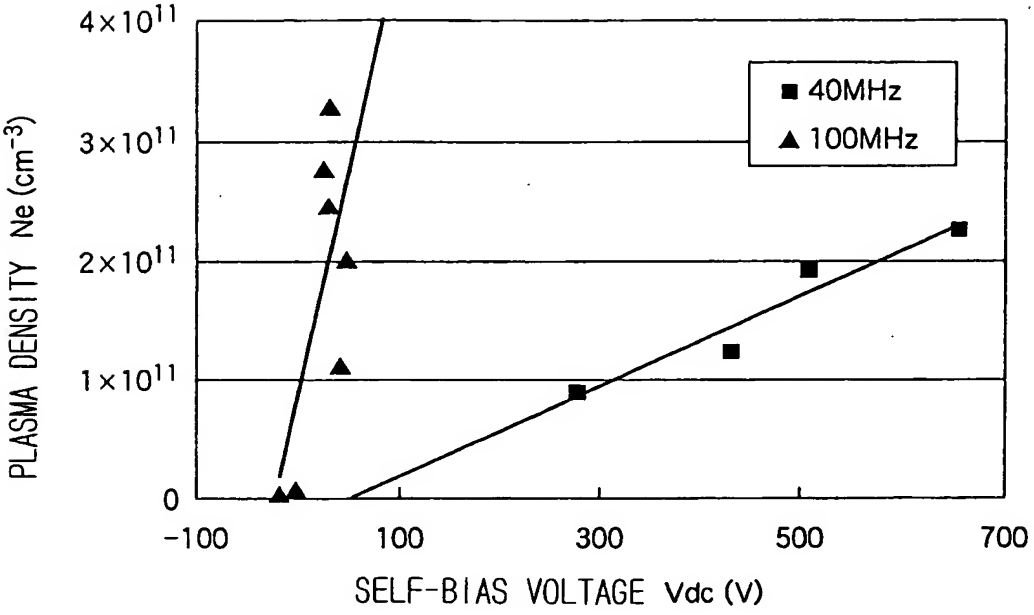
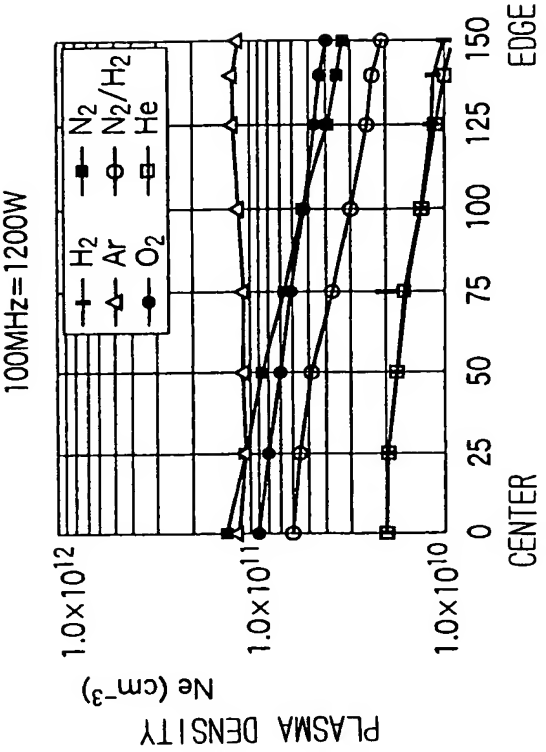
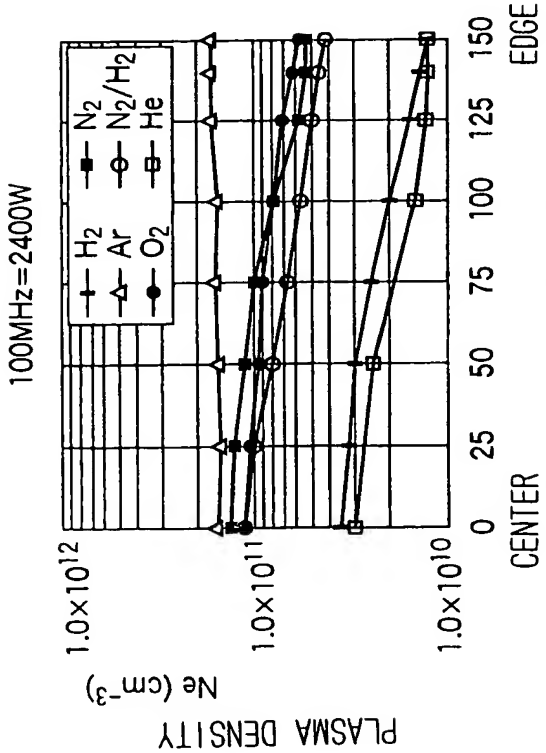

4×10^11
3×10^11
2×10^11
1×10^11
0
PLASMA DENSITY Ne (cm^-3)
■ 40MHz
▲ 100MHz
-100
100
300
500
700
SELF-BIAS VOLTAGE Vdc (V)

FIG. 8



H_2 : $1.5\times10^{10}\pm33.5\%$
N_2 : $6.7\times10^{10}\pm61.5\%$
Ar : $1.1\times10^{11}\pm 5.5\%$
N_2/H_2 : $3.7\times10^{10}\pm55.5\%$
O_2 : $6.0\times10^{10}\pm41.9\%$
He : $1.4\times10^{10}\pm39.0\%$

FIG. 9b



H_2 : $2.3\times10^{10}\pm49.5\%$
N_2 : $8.9\times10^{10}\pm44.5\%$
Ar : $1.7\times10^{11}\pm 4.5\%$
N_2/H_2 : $6.9\times10^{10}\pm49.6\%$
O_2 : $8.3\times10^{10}\pm31.8\%$
He : $1.8\times10^{10}\pm47.3\%$

FIG. 9a

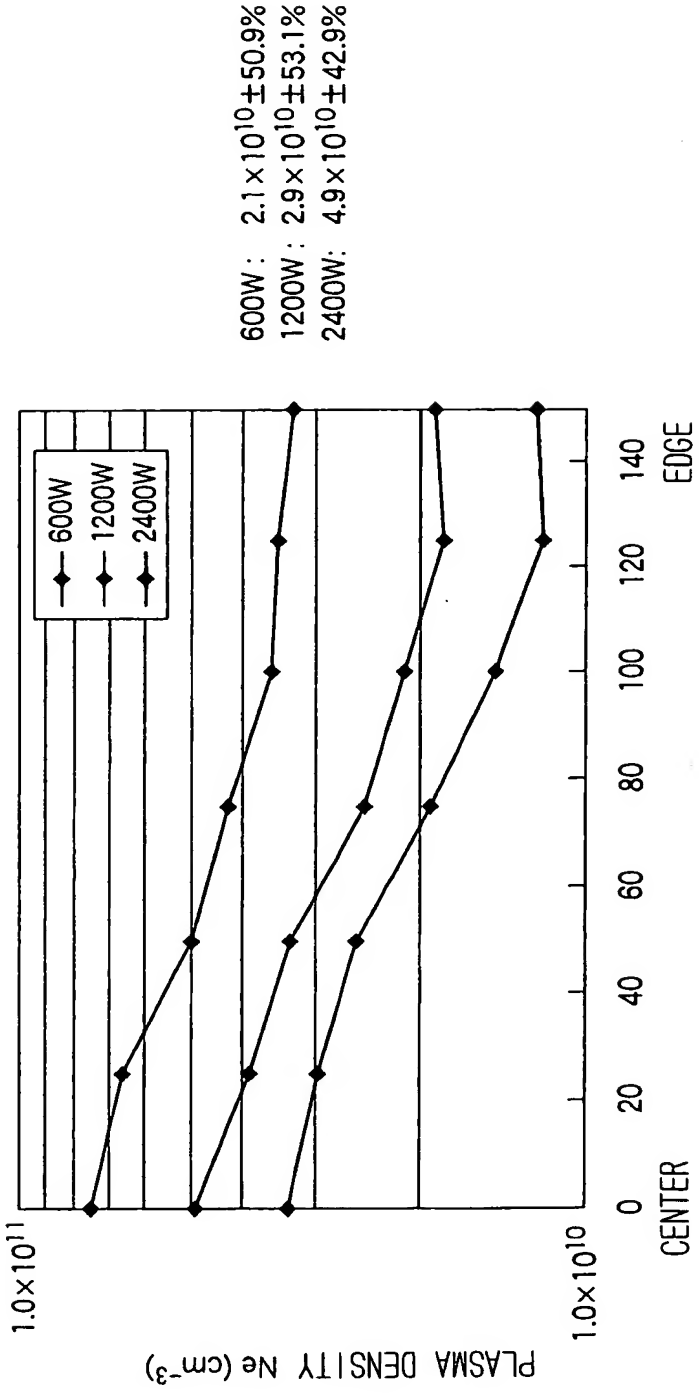
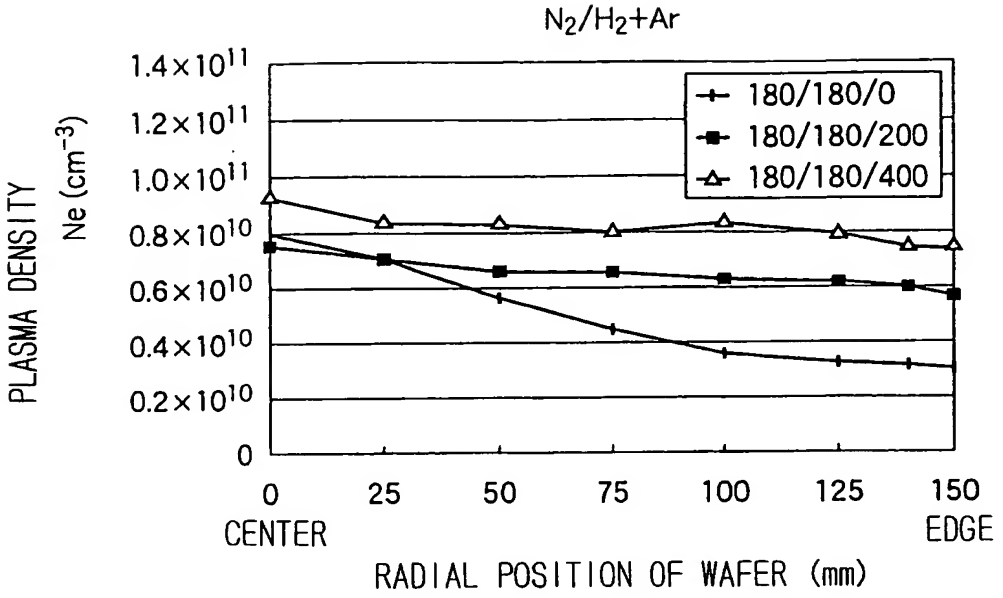
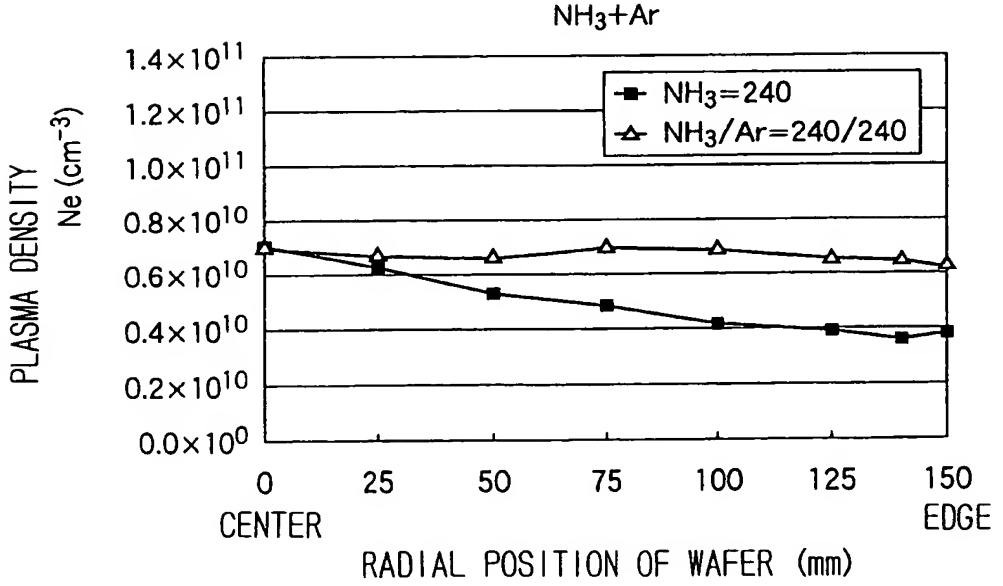

600W : 2.1×10^10±50.9%
1200W : 2.9×10^10±53.1%
2400W: 4.9×10^10±42.9%
600W
1200W
2400W
1.0×10^11
1.0×10^10
PLASMA DENSITY Ne (cm^-3)
0
20
40
60
80
100
120
140
CENTER
EDGE
RADIAL POSITION OF WAFER (mm)

FIG. 10



Ar=0 : $4.8\times10^{10}\pm50.0\%$
Ar=200 : $6.5\times10^{10}\pm13.6\%$
Ar=400 : $8.2\times10^{10}\pm11.3\%$

FIG. 11



Ar=0 : $4.9\times10^{10}\pm35.2\%$
Ar=240 : $6.8\times10^{10}\pm 5.7\%$

FIG. 12

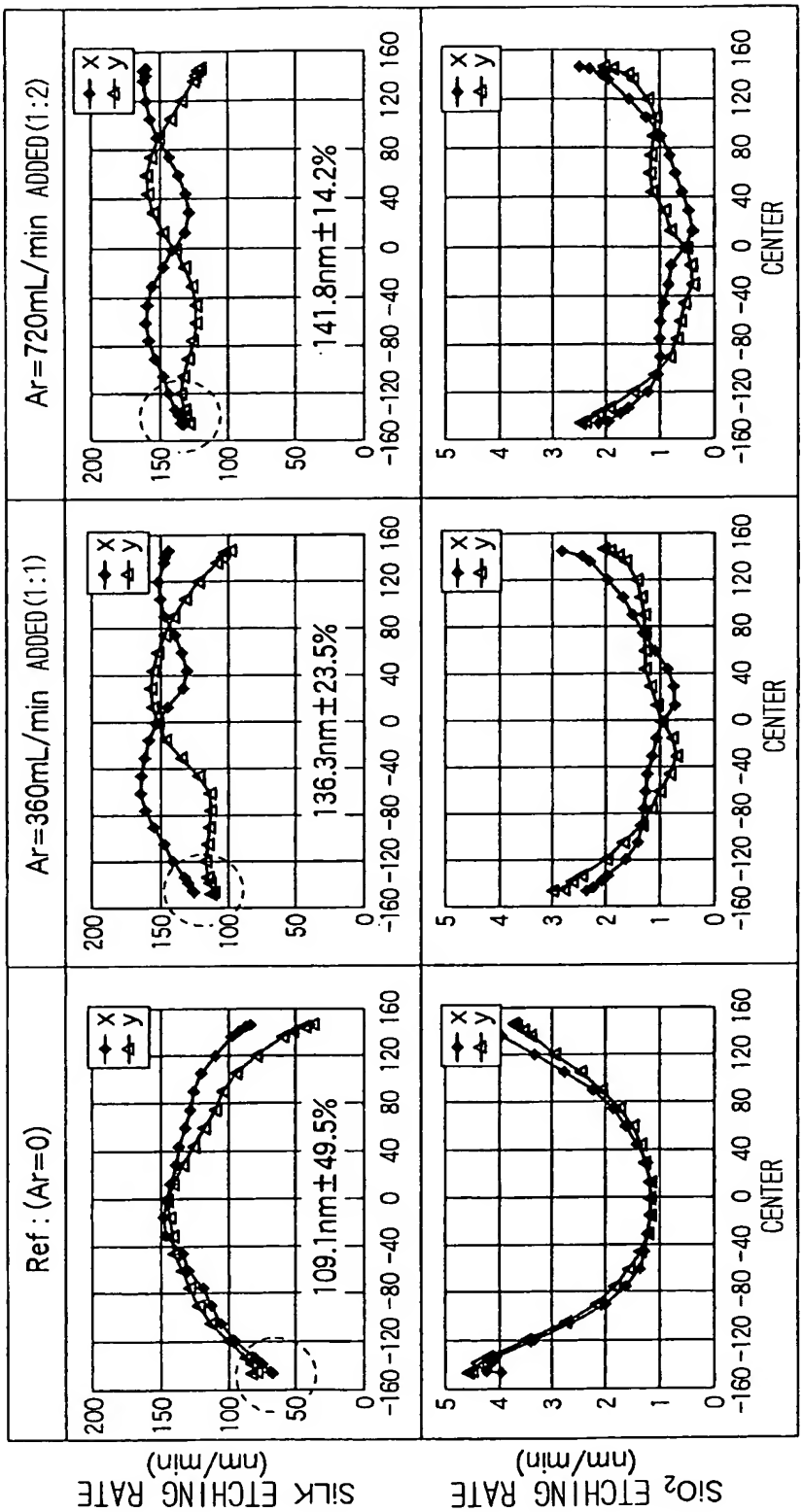

Ref : (Ar=0)
Ar=360mL/min ADDED(1:1)
Ar=720mL/min ADDED(1:2)
SiLK ETCHING RATE (nm/min)
SiO2 ETCHING RATE (nm/min)
109.1nm±49.5%
136.3nm±23.5%
141.8nm±14.2%
X
y
CENTER
RADIAL POSITION OF WAFER (mm)

FIG. 13

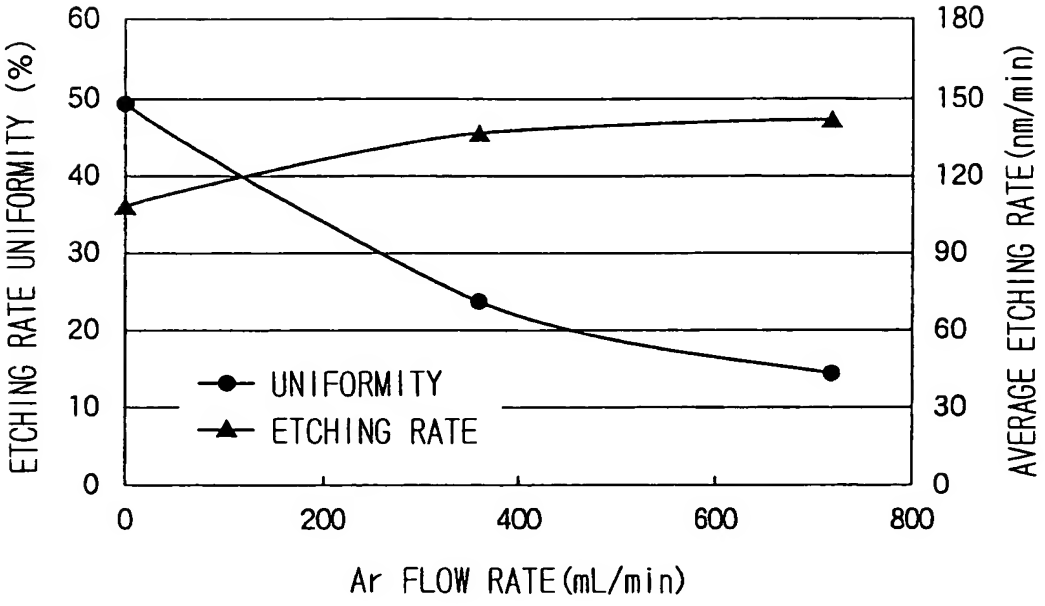

60
50
40
30
20
10
0
ETCHING RATE UNIFORMITY (%)
180
150
120
90
60
30
0
AVERAGE ETCHING RATE(nm/min)
UNIFORMITY
ETCHING RATE
0
200
400
600
800
Ar FLOW RATE(mL/min)

FIG. 14

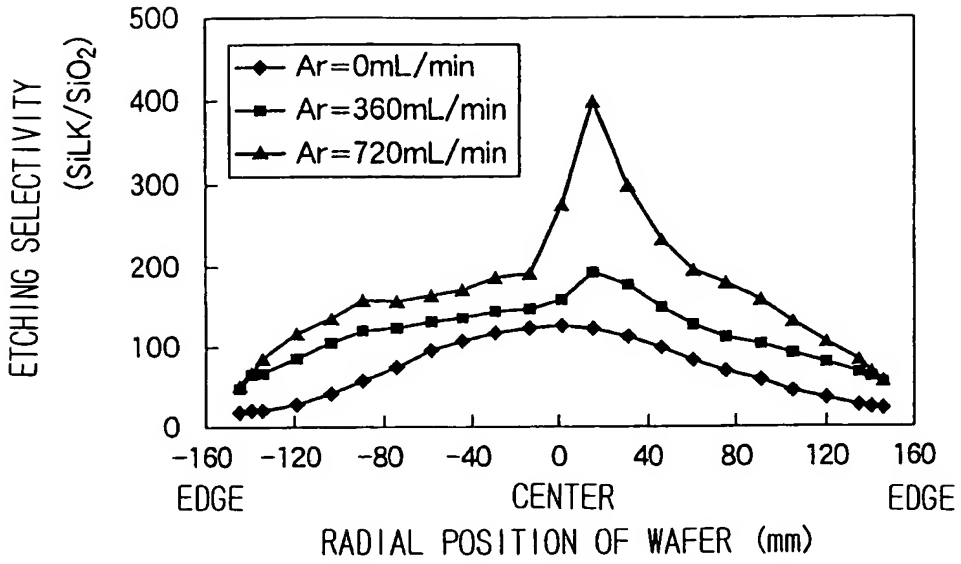


FIG. 15a

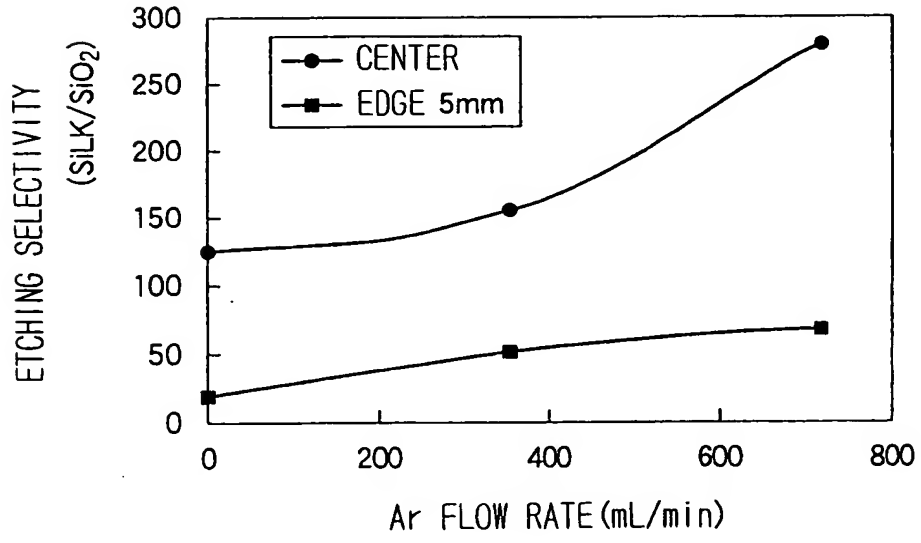


FIG. 15b